1705-4 MEASUREMENT AND PAYMENT

Vehicle Signal Head (____) and *Pedestrian Signal Head* (____) will be measured and paid as the actual number of signal heads of each type of material (aluminum or polycarbonate), size and number of sections furnished, installed and accepted.

Vehicle Signal Head with Single Optically-Programmed Sections will be measured and paid as the actual number of signal heads containing a single optically-programmed section furnished, installed and accepted.

Vehicle Signal Head with Multiple Optically-Programmed Sections will be measured and paid as the actual number of signal heads containing multiple optically-programmed sections furnished, installed and accepted.

Louver will be measured and paid as the actual number of signal sections for which louvers have been furnished, installed and accepted.

Modify Existing Vehicle Signal Head will be measured and paid as the actual number of existing vehicle heads modified and accepted.

Signal Cable will be measured and paid as actual linear feet of signal cable furnished, installed and accepted. Measurement will be point to point with no allowance for sag. Twenty-five feet will be allowed for vertical segments up or down poles.

Lead-in Cable will be measured and paid in accordance with Section 1726.

No measurement will be made of visors, wire entrance fittings, interconnecting brackets, mounting assemblies, pedestrian pushbuttons, pedestrian signal signs and signal head shifts as these are incidental to furnishing and installing signal heads. No measurement will be made for drip loops, coiled sections or lashing wire as these are incidental to furnishing and installing signal cable.

Payment will be made under:

Pay Item	Pay Unit
Vehicle Signal Head (____)	Each
Pedestrian Signal Head (____)	Each
Vehicle Signal Head With Single Optically-Programmed Sections	Each
Vehicle Signal Head With Multiple Optically-Programmed Sections	Each
Louver	Each
Modify Existing Vehicle Signal Head	Each
Signal Cable	Linear Foot

SECTION 1706
BACKPLATES

1706-1 DESCRIPTION

Furnish and install backplates for vehicle signal heads with all necessary hardware.

1706-2 MATERIAL

Refer to Division 10.

Item	Section
Backplates	1098-2

Furnish material, equipment and hardware under this section that is pre-approved on the ITS and Signals QPL.

1706-3 CONSTRUCTION METHODS

Install backplates for vehicle signal heads so as not to interfere with the function of all door hinges, signal section latches and mounting hardware. Do not bend or deform backplates during installation. Gooseneck fittings may be installed in reverse to accommodate backplates. Use stainless steel fasteners for attaching backplates to signal sections.

1706-4 MEASUREMENT AND PAYMENT

Backplates will be measured and paid in units of each, furnished, installed and accepted. No measurement will be made for different sizes of backplates.

Payment will be made under:

Pay Item	Pay Unit
Backplate	Each

SECTION 1710
MESSENGER CABLE

1710-1 DESCRIPTION

Furnish and install messenger cable (spanwire) with cable clamps, machine bolts, eye bolts, 3-bolt clamps, eye nuts, split-bolt connectors and all necessary hardware.

1710-2 MATERIAL

Refer to Division 10.

Item	Section
Grounding Electrodes	1091-6
Messenger Cable	1098-3
Pole Line Hardware	1098-6
Wire	1091-2

Furnish material, equipment and hardware under this section that is pre-approved on the ITS and Signals QPL.

1710-3 CONSTRUCTION METHODS

Install guy assemblies before installing messenger cable.

Use 3/8" messenger cable for spans supporting vehicle signal heads and/or signs.

Use 1/4" messenger cable for spans supporting only cables unless otherwise specified.

For messenger cable crossing over railroad tracks, provide a minimum of 27 ft of vertical clearance, unless otherwise specified.

For permanent installations, install messenger cable in continuous lengths with no splices except where an insulator is required. With prior approval, existing messenger for temporary installations may be extended instead of installing new messenger cable.

Tension messenger cable to eliminate appreciable sag and to match sag of surrounding utilities. Otherwise, allow 3% to 4% sag of the span length between poles.

For mid-run spans using wood poles, attach messenger cable to the pole with a 3-bolt cable clamp with J-hook consisting of 5/8" diameter machine bolts, J-hooks, washers and square nuts to attach messenger cable to wood poles. Provide machine bolts that are 3" longer than the pole diameter. For mid-run spans using metal or other Department-approved poles, attach messenger cable to the pole with a 3-bolt clamp with J-hook secured to the metal pole via a pole band clamp. Refer to *Metal Pole Standard Drawing* Sheet M6 found on the Department's website.